

Chapter 1: General Information

Introduction

Thank you for purchasing a Velocity11 VCode bar code print and apply station. This unit prints and applies bar codes to microplates and lids. The VCode applies printed labels to one long and one short side of the microplate and can adjust for different skirt heights on both shallow and deepwell plates. The VCode's compact size allows for easy integration into your robotic system. Most importantly, the VCode's process time is significantly less than competing products, making it the optimal solution for bar code printing and applying.

The purpose of this manual is to provide the basic information necessary to achieve optimal efficiency from your VCode unit. Whether your application is manual bar code applying or integration into an automated platform, this manual will walk you through the required steps to get your VCode working to its fullest capacity.

Velocity11 strives to produce the highest throughput and highest quality products available on the biotechnology market. To help us better serve your future needs, please contact our Service Center with any feedback on this manual or our product.

In addition to this user's manual, technical information on the VCode and related applications is available from Velocity11. For more information, please visit our website at <http://www.velocity11.com> or call us at (650) 846-6500. Please note that this is version 1.1 of the VCode User's Manual.

System Requirements

Computer Platform

- Pentium 166 based or better PC
- Windows NT 4.0
- 32 MB RAM
- Serial I/O RS232 9 pin connector supporting 56,700 baud communication speed

Lab Requirements

- 11.5" x 24" benchspace
 - 1/4" compressed air line achieving 90-95 psi.
 - 1/4" vacuum line achieving at least 23 inHg.
 - 120 VAC, 50-60 Hz, 3 amps
-

Warnings and Advisories

Your safety while utilizing the VCode is of **paramount importance**. Carefully read and follow all warnings and cautions that are outlined in this manual. *The VCode must only be used in the manner in which it was intended by Velocity11.* Any other use of the VCode may cause damage to the product or harm to the user.

Take note of the following signs. They are found throughout the manual and call attention to a procedure or practice that, if not correctly performed, could potentially result in a hazardous condition or damage part or all of the product. Do not proceed beyond a warning label until the indicated conditions are fully understood and met.

**CAUTION**

“Caution” signs signal procedures that will potentially cause damage to the instrument if not performed correctly.

**WARNING**

“Warning” signs signal procedures that will potentially cause bodily harm or death if not performed correctly.

This unit is currently being evaluated and tested for full CE and UL certification.

Any modification or changes to the VCode not expressly approved in this manual could void your warranty and authority to operate this equipment.

Warranty Information and Service Contracts

All Velocity11 products are covered under warranty for parts and labor for the first year of service. Velocity11 offers two different levels of service: Gold Service and Platinum Service. Both services cover parts and labor. The differences between the two services are outlined below:

Table 1: Velocity11 Service Plans

	Gold Service	Platinum Service
Shippable Items	The damaged unit will be shipped to Velocity11 for repair. Upon repair, the unit will be shipped back to you.	A replacement unit will be shipped immediately to use while your unit is being repaired. You are required to ship your unit back to us for repair within three days of receiving the replacement unit.
Non-Shippable Items	A technician will be dispatched to your site the next business day, not including holidays.	A technician will be dispatched to your site within four hours of your service call.

Your VCode is automatically covered by the Gold Service Plan during the first year. If you wish to upgrade to the Platinum Plan, please call Velocity11's Service Center at (650) 846-6500. For the product warranty for this VCode, please see Appendix B, "Velocity11's Product Warranty" on page 31.

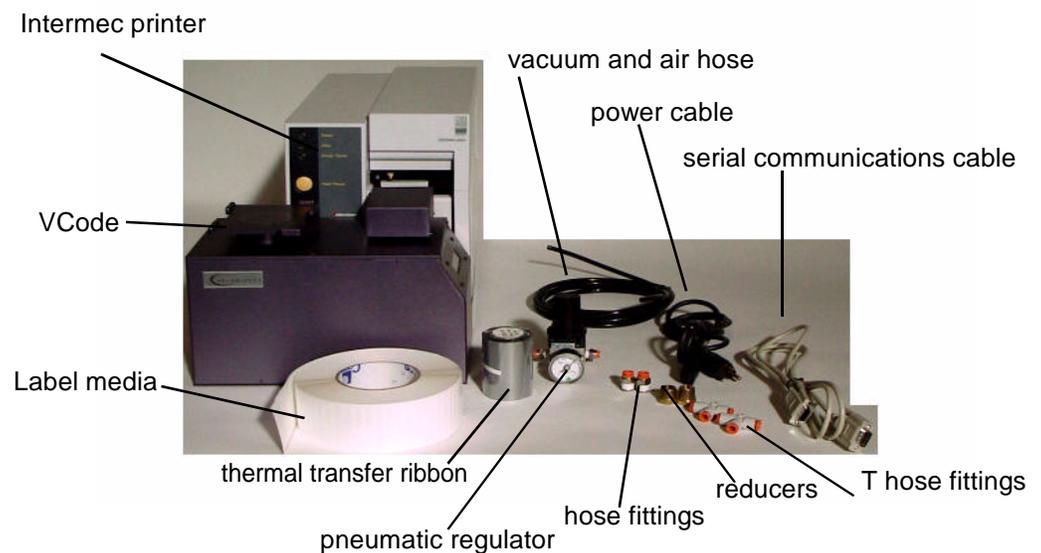
Chapter 2: Getting Started

Unpacking the VCode™

Your VCode has come shipped to you direct from Velocity11. The following is a list of the contents of the Velocity11 VCode package (see figure 1).

- VCode
- Intermec® 3240 printer
- Power cable
- Serial communication cable
- 1/4" line for vacuum and air supply
- Pneumatic regulator
- Two hose fittings: 1/4" NPT-1/4" one touch hose (*optional depending on your house air and vacuum systems*)
- Two one-touch T hose fittings (*optional depending on your house air and vacuum systems*)
- Reducers
- Label media
- Thermal transfer ribbon
- VCode ActiveX CD
- *Intermec 3240 Bar Code Label Printer User's Manual* (printed from Intermec's website at <http://corp.intermec.com>)
- *Intermec IPL Programming Reference Manual* (printed from Intermec's website at <http://corp.intermec.com>)
- *VCode User's Manual*

Figure 1: The VCode package



Inspection

Inspect all the items for possible shipping damage before continuing the set up process. If anything is missing or appears damaged, contact a Velocity11 service representative as soon as possible. Save the carton and packing materials in case you ever need to ship the unit.

Setting Up the VCode™



CAUTION

Before starting, unplug all electronic components and ensure that all switches are in the “Off” position.

VCode Placement

The VCode must be securely mounted on a stable bench. Avoid placing the unit near a heat source or any potentially hazardous location. Mounting points have been drilled into the base plate for you to use to secure the VCode to your benchtop.

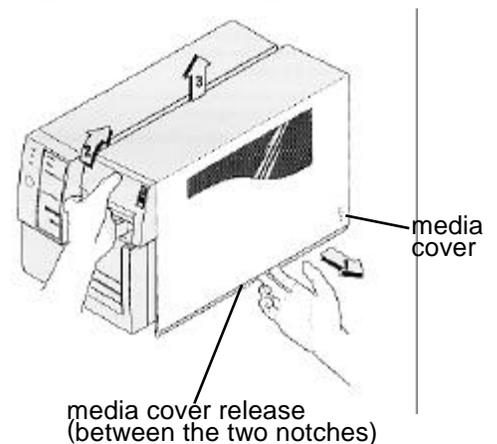
Opening the Printer

(Instructions and figure reprinted with permission of Intermec Technologies Corporation, *3240 Bar Code Label Printer User's Manual*, p. 1-8, © 1997 Intermec Technologies Corporation.)

You need to open the printer every time you load media or perform maintenance procedures.
To open the printer:

- 1) Place the fingers of your right hand between the two notches on the lower edge of the media cover (the media cover release) and pull the bottom of the media cover away from the base of the printer (see figure 2).
- 2) Grasp the front of the media cover with your left hand and lift the media cover up to release it from the frame.
- 3) Lift the media cover away from the top of the printer.

Figure 2: Opening the Printer



Loading a Roll of Media

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Note: Attached to the media roll is a small label with a three-digit sensitivity number printed on it. Make sure you save this label. You need this information to set the correct media sensitivity number.

Note: If you lift the printhead while printing with self-strip, you may not receive the best performance from the Precision Print technology. If you must lift the printhead, remove accumulated liner from the takeup hub before resuming print.

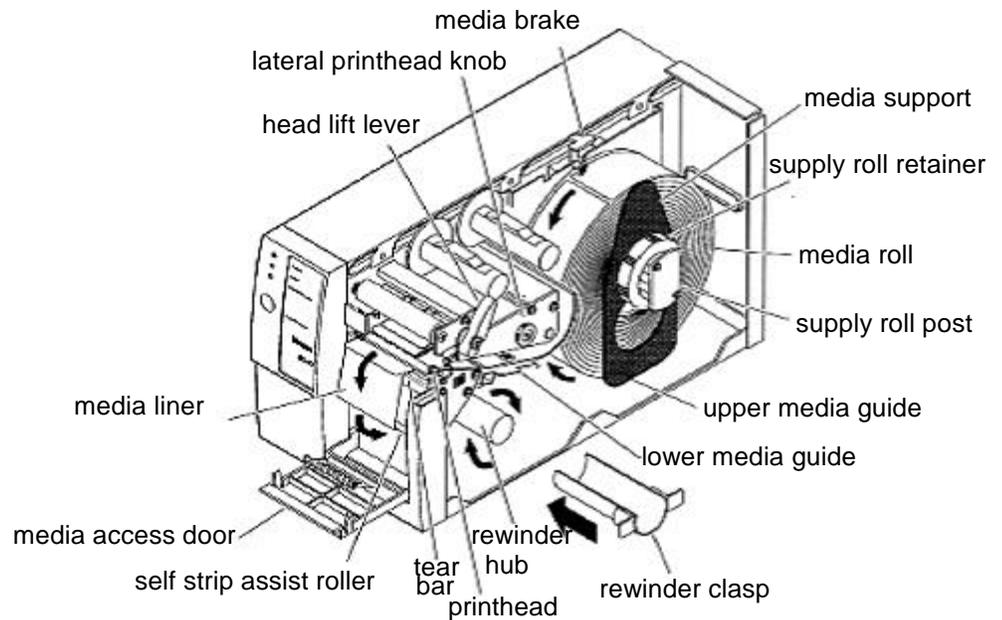
To load self-strip media:

- 1) Open the printer (see figure 2).
- 2) Raise the printhead by rotating the head lift lever clockwise to release it (see figure 3).
- 3) Turn the supply roll retainer counterclockwise to release it and slide it to the outer end of the supply roll post. Turn the supply roll retainer clockwise to lock it in place.
- 4) Lift the media brake up and slide it towards the front of the printer until it reaches its resting position.
- 5) Place the media roll on the supply roll post and position it firmly against the printer.
- 6) Lift up on the media brake, slide it towards the back of the printer, and lower it onto the media roll.
- 7) Turn the supply roll retainer counterclockwise and slide it up to the edge of the media roll. Turn the supply roll retainer clockwise to secure.

Note: If you are using a narrow roll of media (less than 1 inch), insert the media support between the roll of media and the supply roll retainer before you secure it in place.

- 8) Unscrew the edge guide and slide it to the outer edge of the lower media guide. Screw the edge guide in place.
- 9) Pull down on the lower media guide to access the media path.
- 10) Unroll several inches of media and insert it between the two media guides and out the front of the printer. Release the lower media guide.

Figure 3: Loading media for self-strip printing



- 11) Pull out 10 to 12 inches of media and remove the exposed labels from the media liner.
- 12) Open the media access door and thread the media liner under the self-strip assist roller and over the rewinder hub in a clockwise direction.
- 13) Remove the rewinder clasp from the rewinder hub and wind approximately 2 inches of media liner over the rewinder hub.
- 14) Secure the media by snapping the rewinder clasp onto the rewinder hub. Turn the rewinder hub clockwise to remove all slack from the media liner between the tear bar and the rewinder hub.
- 15) Close the media access door.
- 16) Use your third-party software or the printer command set to enable self-strip printing and the label taken sensor.
- 17) Rotate the head lift lever counterclockwise until it locks.
- 18) Press Feed/Pause to advance approximately 6 inches of media through the printer. Remove the stripped labels from the front of the printer.
- 19) Unscrew the edge guide and slide it inward until it just touches the edge of the media. Screw the edge guide in place.
- 20) Replace the printer cover. The printer is now ready to print labels.

Loading the Thermal Transfer Ribbon

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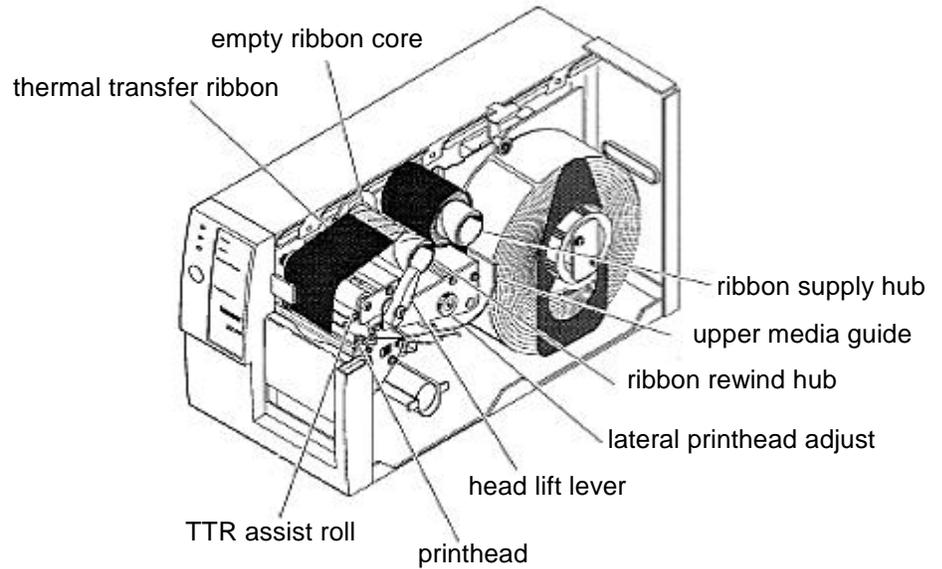
Note: Save the plastic bag that your ribbon comes in. Attached to the ribbon bag is a sticker with a three-digit sensitivity number printed on it. You need this information to set the correct media sensitivity number.

- 1) Make sure the printhead is in the raised position. If not, turn the head lift lever clockwise until it releases the printhead.
- 2) Place the empty ribbon core that comes with the printer on the ribbon rewind hub.
- 3) Detach the leader from the new thermal transfer ribbon roll and unwind the end of the ribbon approximately 8 inches. The edge of the ribbon has a leader (with an adhesive strip on the leader edge) to guide the ribbon through the printhead mechanism.
- 4) Slide the roll of thermal transfer ribbon onto the ribbon supply hub with the ribbon roll winding clockwise.
- 5) Route the ribbon leader through the printer mechanism as shown in the illustration.

Note: Make sure that the ribbon goes over the label gap sensor PCB located on the top of the upper media guide. If the ribbon becomes caught on the PCB, it can cause the ribbon to wrinkle.

Note: Make sure that the ribbon runs above the upper media guide. The ribbon must come in contact with the printhead.

- 6) Attach the leader from the new thermal transfer ribbon roll to the empty ribbon core using the adhesive strip on the leader edge.
- 7) Turn the ribbon rewind hub clockwise until the ribbon runs smoothly through the printhead mechanism.
- 8) Engage the printhead by rotating the head lift lever counterclockwise until it locks.
- 9) To enable thermal transfer printing, set DIP switch 8 on the bottom bank of switches to the on position.
- 10) Press the Feed/Pause button to advance the ribbon through the printer.
- 11) Close the printer. The printer is now ready to print labels.

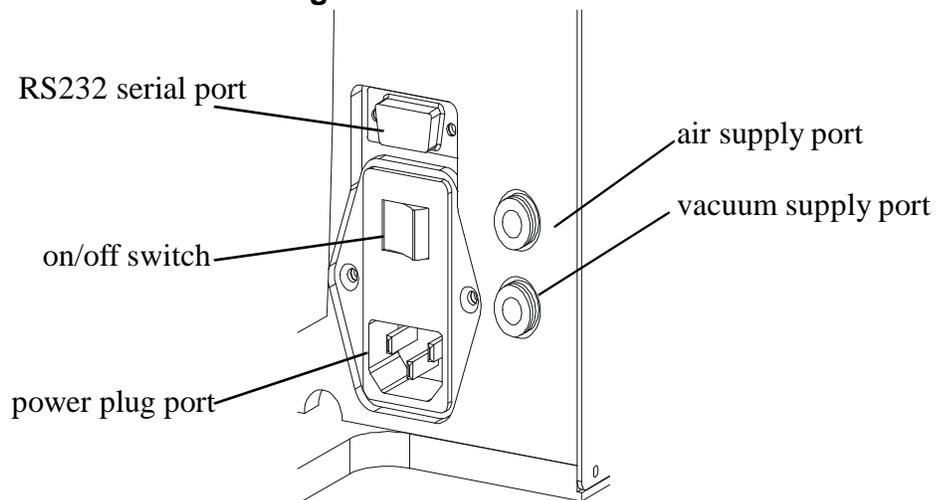
Figure 4: Loading the thermal transfer ribbon

Note: When replacing the thermal transfer ribbon roll in the future, use the empty ribbon supply core as the new empty ribbon core.

Installation

Install Vacuum Line

- 1) Take the supplied 1/4" line and cut it to the length you need for the vacuum line.
- 2) Plug one end into your lab's vacuum supply.
- 3) If your house vacuum uses a threaded nozzle, attach the 1/4" NPT fitting to your house air. Attach the other end of the fitting, the 1/4" one touch hose fitting, into the 1/4" hose.

Figure 5 : Control Panel

- 4) Plug the other end of the 1/4" line into the quick release vacuum supply port on the back of the VCode. Note that this port is the lower of the two hose ports (see figure 5).
- 5) After installation, tug gently on the vacuum line. If you feel resistance, then the line has been properly installed.

Note: You may have another machine in your laboratory hooked up to the house vacuum supply. In this case, use the one touch 1/4" T hose connector to attach both the VCode and your other machine to the house vacuum.

Install Compressed Air Line



WARNING

Switch off the house air before installing the VCode.

Working with open, charged air lines can result in injury. Proper technique should be used to bring an air line to the system. If you have questions regarding this, be sure to contact your facilities department or a Velocity11 service representative.



CAUTION

Ensure that the air line coming into the VCode is properly filtered from moisture. Significant moisture in the air can adversely affect the life of the unit.

- 1) Take the supplied 1/4" line and cut it to the length you need for the air line.
- 2) Plug one end into your lab's air supply.
- 3) If your house air uses a threaded nozzle, attach the 1/4" NPT fitting to the nozzle. Attach the 1/4" one touch hose fitting into the 1/4" hose.
- 4) Plug the 1/4" hose into the pneumatic regulator. The 1/4" hose should plug into the input end (the left side of the regulator marked with an "N") of the regulator.
- 5) Cut another length of line to connect the regulator to the VCode. Plug one end of this line into the output end of the regulator.
- 6) Plug the other end of the 1/4" line into the quick release air supply port on the back of the VCode. Note that this port is the upper of the two ports (see figure 5).
- 7) After installation, tug gently on the line. If you feel resistance, then the line has been properly installed.
- 8) Air pressure is adjusted by the knob on the top of the regulator. Pull the knob up to release it. Turn the knob counter clockwise to increase pressure. Pressure should be set at 90 psi.

Note: You may have another machine in your laboratory hooked up to the house air supply. In this case, use the one touch 1/4" T hose connector to attach both the VCode and your other machine to the house air.

Install Serial Communications Cord

- 1) Plug one end of the serial communications cord into the RS232 serial port on the back of the VCode.
- 2) Plug the other end of the serial communications cord into the available serial port on the PC you will use to control the VCode.

Install Power Cords

**CAUTION**

Operating the VCode at the wrong voltage could seriously damage the instrument.

Before turning on the system, be sure that the voltage supplied to the VCode is 120 VAC, 50-60 Hz, and the line is rated to supply a minimum of 3 amps.

- 1) Ensure that the VCode is turned off.
- 2) Plug one end of the power cord into the AC power port at the rear of the VCode.
- 3) Plug the other end of the power cord into an appropriate grounded electrical socket.

**WARNING**

Keep clothing, hair, and jewelry away from the VCode at all times.

The VCode is an automated piece of equipment with moving parts. Ensure that hair, clothing, and jewelry do not become caught in the machine.

Install VCode Software

- 1) Take the compact disc marked 'VCode ActiveX' from the plastic sleeve.
- 2) Place it in the CD drive of your PC (*Note: for the highest performance from your VCode, we recommend a Pentium 166 or better based PC running Windows NT 4.0*)
- 3) Open the CD drive on your computer.
- 4) Click "Set Up.exe". "InstallShield Wizard" will appear.
- 5) Click "Next". "Choose Destination Location" will appear.
- 6) The installation program will install the program on your C drive unless you otherwise specify a location. To specify a location, click "Browse" and choose the desired destination folder.
- 7) When the folder has been specified, click "Next". "Select Program Folder" will appear.
- 8) Click "Next" if you want the folder shown. If not, select a new folder and then click "Next".
- 9) "Setup Status" Screen will appear and "InstallShield Wizard Complete" will appear. Click "Finish".
- 10) The VCode ActiveX has been installed in the folder you specified. You are now ready to run the VCode ActiveX from your computer.

Chapter 3: Diagnostics

Running the VCode ActiveX

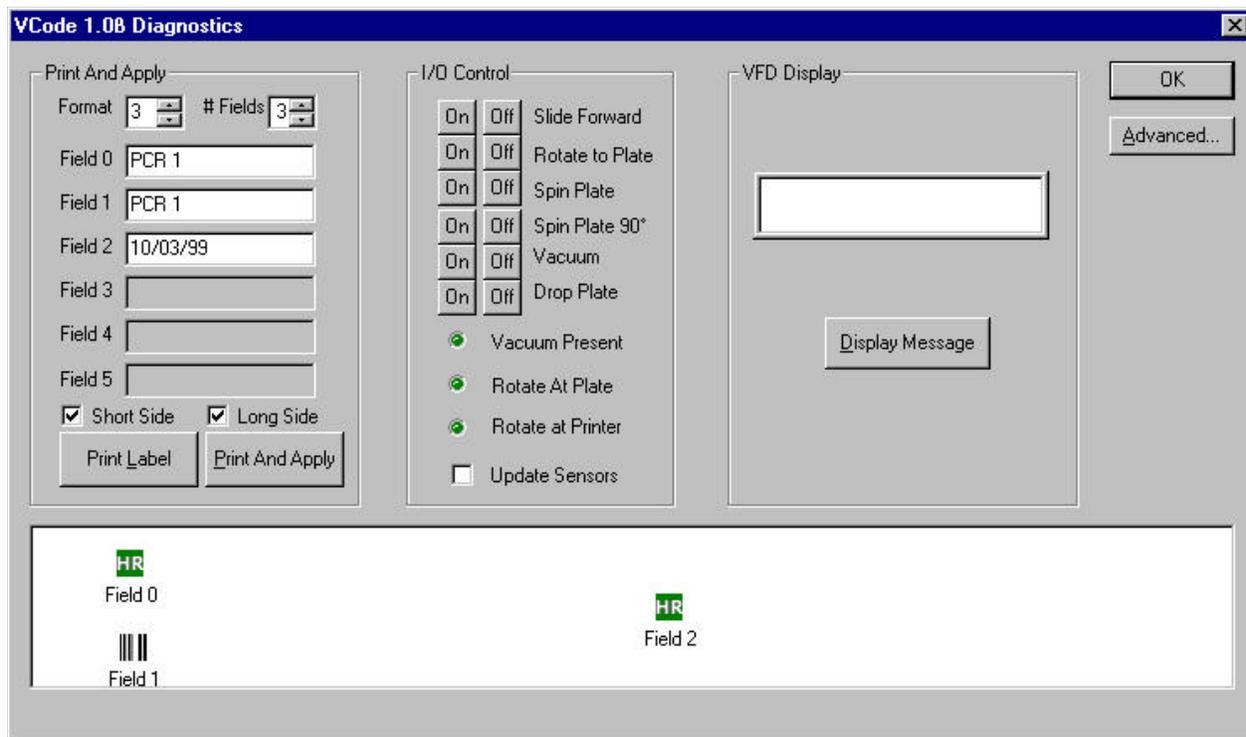
To run the VCode ActiveX and to access the diagnostics dialog,

- 1) Open the folder where you saved the VCode ActiveX during the installation process. See “Install VCode Software” on page 10.
- 2) Click on the folder “VCode ActiveX”.
- 3) Click on “VCodeContainer.exe”.
- 4) You will be asked to set the comm port to communicate with the VCode. Choose the comm port of your choice.
- 5) The VCode diagnostics dialog will appear.

Diagnostics Dialog

The diagnostics section gives you the ability to perform diagnostics on the VCode as well as to design and save different bar code formats.

Figure 6: Diagnostics Display



Print And Apply Section

Use this section to define a label to be printed. The label can either be printed and applied to a plate or lid using the “Print & Apply” button, or just printed using the “Print Label” button (see figure 6).

I/O Control Section

This section allows the user to individually control the various actuators of the VCode. Care should be taken not to crash the actuators into one another. Particularly, do not “Rotate to Plate” while “Slide Forward” is on (see figure 6).

When the “Update Sensors” checkbox is checked, the inputs of the VCode are scanned approximately once every 500 mS. It should be noted that when this box is checked, other VCode operations executed from the diagnostics dialog may be slowed slightly.

Vacuum Florescent Display

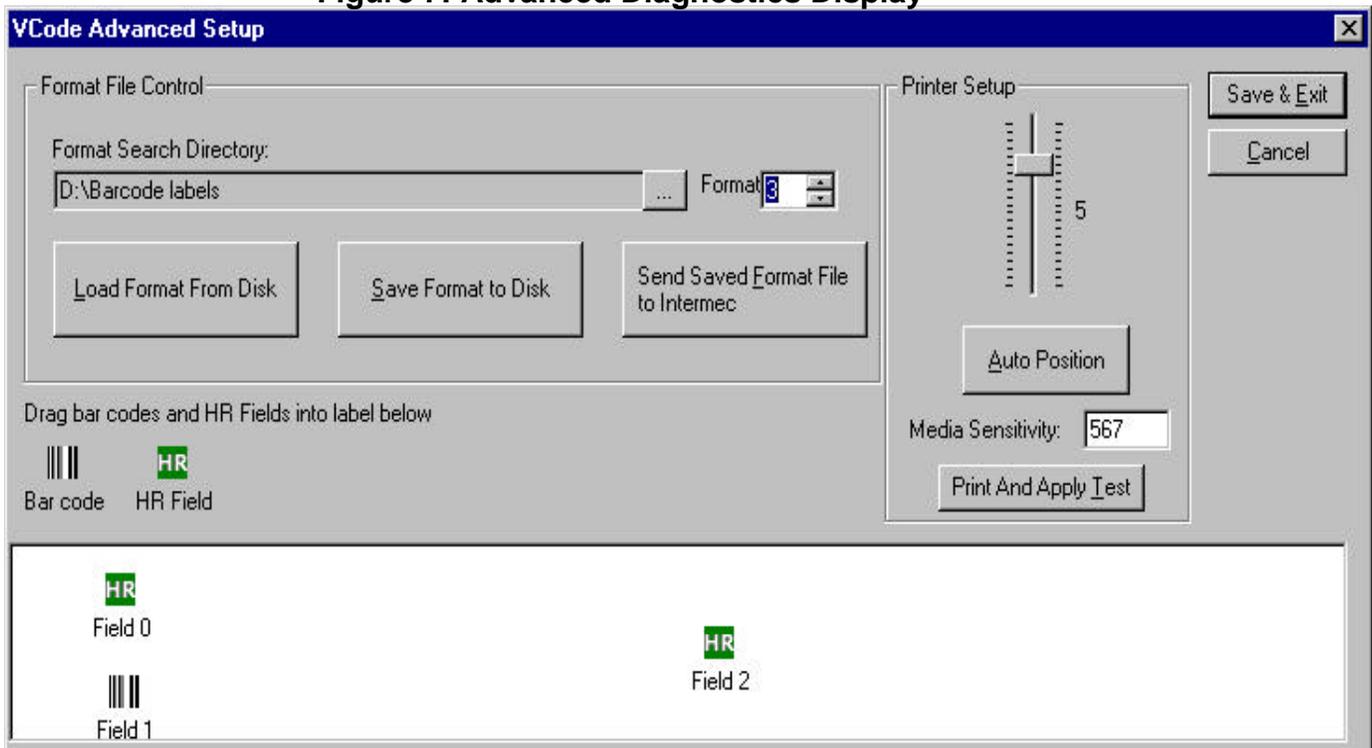
This section allows the user to print messages to the VCode's vacuum florescent display (VFD). The text appears in the edit box as it will on the display (see figure 6).

Advanced Section

Use this section to do the following:

- set the position that the printer presents labels
- set the media sensitivity number
- cycle test the VCode
- design and save bar code formats

Figure 7: Advanced Diagnostics Display



Printer Setup

The slider adjusts the position that the Intermec presents labels to the VCode. A higher number means that the labels will be positioned higher with respect to the VCode's vacuum pads.

The Auto Position feature allows the VCode to automatically determine the optimal label position. When this button is clicked, a small dialog will appear asking the user to enter a minimum and maximum test position (from -10 to 10). The VCode will then print one label at each label position in this range and set itself to the optimal position setting (see figure 7).

Media Sensitivity Number

Use this box to set the media sensitivity number. The media sensitivity number specifies the amount of heat required by the printhead to image a label. The media sensitivity number is a three digit number found on the thermal transfer ribbon package. The VCode has set the default for thermal transfer ribbons to 567 (see figure 7). For more information on media sensitivity numbers, please see Intermec's *3240 Bar Code Label Printer User's Manual*, p. 2-13, © 1997 Intermec Technologies Corporation.

Running Tests

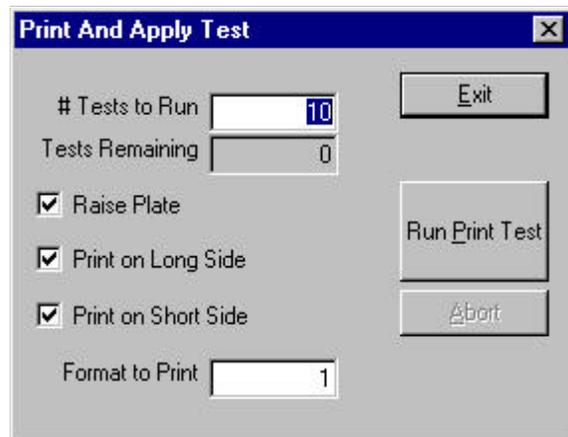
Use this dialog box to set up a print test.

- 1) In the Advanced Diagnostics screen, click on "Print and Apply Test".
- 2) The "Print and Apply Test" screen will appear (see figure 8).
- 3) Define how many tests you wish to run (enter number 1 - 100).

Note: Do not try to run more than 100 tests at a time. If you run more than 100 tests on one plate, the labels build up on the side of the plate. The extra weight causes the plate to rotate away from the print-head. You may run multiple tests in groups of 100, providing you remove the built up labels from the plate.

- 4) Click "Raise Plate" as necessary for your plate type.
- 5) Click "Print on Long Side" and/or "Print on Short Side" accordingly. You can check or uncheck "Print on Long Side" and "Print on Short Side" during the test. Changes will take effect after the next test cycle finishes.
- 6) Click "Run Print Test".
- 7) Click "Abort" to quit at the end of the next test cycle.
- 8) Click "Exit" to exit without running a print test.

Figure 8: Print and Apply Test Display



Creating, Saving and Printing a format

Use the diagnostics drag and drop format editor to create bar code formats (see figure 7).

- 1) In the diagnostics screen, use the arrow keys next to “Format” to specify the format number.
- 2) Use the arrow keys next to #Fields to specify the number of fields.
Note: “Field” includes both bar codes and human-readable fields (HR fields).
- 3) Use the drag and drop editor to place the bar code and HR fields in the correct positions in the label display.
Note: Field 0 cannot be a bar code. Please choose an HR field for field 0.
- 4) Double click on the icon to edit the field.
- 5) The properties screen will appear for your particular field.
- 6) After editing your fields, return to the Advanced Setup menu.
- 7) You must save your format before printing.
- 8) Click “Save Format to Disk”.
- 9) You will be prompted to save the file under the format name. If you do not choose the format name, “format*.txt” you will not have the preview functionality.
- 10) Click “OK” to accept the format name.
- 11) Click “Send format file to Intermec”. The format names must be stored in the Intermec for the printer to access it.
- 12) Exit to the Diagnostics screen.
- 13) On the Diagnostics screen, type in the field boxes the names or numbers you want to appear in the various fields.
- 14) Test print by clicking on “Print Label” or “Print and Apply”.
- 15) You may wish to practice a bit with various fonts, bar code symbologies and positions until you find a combination that suits your needs.

Note: The various fonts and symbologies are not scaled the same. You may have to experiment with magnification factors in the properties screens to achieve the proper sized font for your application.

Load Format from Disk

If you have a saved format that you would like to use with the VCode, you may do so by clicking the “load format from disk” button. While you can send this format to the printer without problems, be aware that the display on the advanced diagnostics screen may not accurately reflect a format which has not been saved as “format*.txt”. The display will only allow a preview of your format. If you change the format number in the format number box, the display will revert to the default format for that particular number (see figure 7).

Defining a field's properties

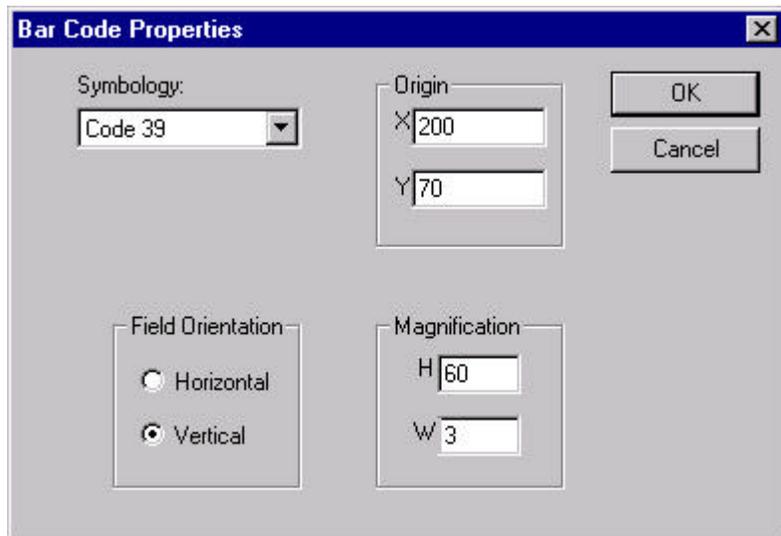
The bar code and human-readable field's properties are controlled through the Bar Code Properties display and the Human-Readable Field's Properties display respectively. To access these displays, you must be in the label display of the Advanced Diagnostics display. You will have to click on the field whose properties you wish to define.

Defining a bar code's properties

- 1) In the Advanced Diagnostics display, click on the bar code icon that you wish to format (see figure 7).

- 2) The Bar Code Properties display will appear (see figure 9). From the pull-down menu, choose the desired symbology for the bar code.

Figure 9: Bar Code Properties Display

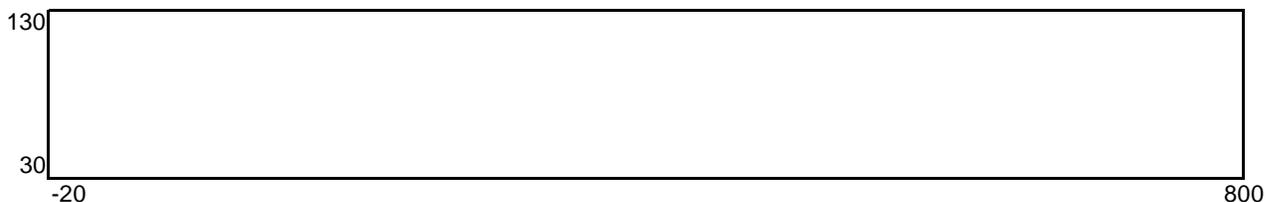


- 3) Choose either "Horizontal" or "Vertical" for the correct orientation of the field on the label.

- 4) Set the height (H) and width (W)

magnification accordingly. (For more information on magnification, see Intermec's *IPL Programming Manual*, pp. 3-18 to 3-19, © 1998 Intermec Technologies Corporation.) The orientation box reflects the position of the bar code on the Advanced Diagnostics display (see figure 7). Change the orientation of the bar code on the Advanced Diagnostics display from the Bar Code Properties display by entering in new X/Y coordinates.

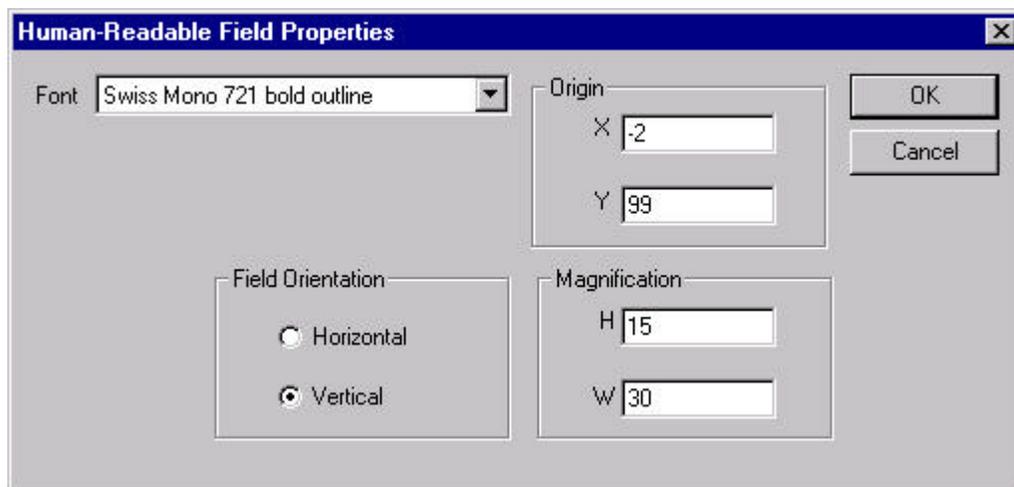
- 5) Click "OK" when done.



Defining a human-readable field's properties

- 1) In the Advanced Diagnostics display, click on the human-readable field icon that you wish to format (see figure 7).
- 2) The Human-Readable Properties display will appear (see figure 10).
- 3) From the pull-down menu, choose the desired font for the human-readable field.
- 4) Choose either “Horizontal” or “Vertical” for the positioning of the field on the label.
- 5) Set the height (H) and width (W) magnification accordingly. For more information on magnification, see Intermec's *IPL Programming* manual, pp. 3-18 to 3-19.
- 6) The orientation box reflects the position of the human-readable field on the Advanced Diagnostics label display. Change the position from the Human-Readable Fields Properties display by entering in new X/Y coordinates.
- 7) Click “OK” when done.

Figure 10: Human-Readable Field Properties Display



Chapter 4: ActiveX

ActiveX Interface

The VCode's ActiveX control makes it easy to integrate the VCode into Velocity11's BioCel™ Series automated workcell or a custom laboratory system. This document provides information on how to use the VCode's ActiveX control with your Visual C++ or Visual Basic application. This manual covers version 1.02B of the VCode ActiveX control only. **In all of the Visual Basic examples, assume that there is a VCode control named VCode1 on the current form.**

Properties

Properties can be thought of as variables whose value can be set or retrieved by the container application.

ControlPicture

Description: Retrieves a picture of the VCode bitmap that can be used in the container's application.

Example: In this example, we will paint the VCode bitmap over a button.

Visual Basic	Visual C++
<pre> \ Assume that there is a button named \ Command1 on the current form. You must \ set the Style property of Command1 to \ "Graphical". Command1.Picture = VCode1.ControlPicture </pre>	<pre> /* The CPicture class will be imported into your project when the ActiveX is installed */ CButton button; // Create a button CPicture VCodePic; CVCode m_VCode; VCodePic = m_VCode.GetControlPicture(); // Retrieve the picture button.SetBitmap((HBITMAP) VCodePic.GetHandle()); // Paint the //bitmap onto the button </pre>

Methods

Methods are essentially functions that can be called by the container application.

Initialize

Description: Initializes the ActiveX and sets the VCode up to work on comm. port iCommPort.

Initialize() should typically be the first method called in a procedure, and only needs to be called one time.

Parameters: short iCommPort

Returns: none

Example:

Visual Basic	Visual C++
<pre>` Initialize to use COM1 VCode1.Initialize 1</pre>	<pre>CVCode m_VCode; m_VCode.Initialize(1);</pre>

ShowDiagsDialog

Description: Displays the diagnostics dialog.

Parameters: none

Returns: none

Example:

Visual Basic	Visual C++
<pre>` Initialize to use COM1 VCode1.Initialize 1 ` Open diagnostics dialog VCode1.ShowDiagsDialog</pre>	<pre>CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Open diagnostics dialog m_VCode.ShowDiagsDialog();</pre>

Close

Description: Closes the serial port used by the VCode.

Parameters: none

Returns: none

Example:

Visual Basic	Visual C++
<pre>` Initialize to use COM1 VCode1.Initialize 1 ` Free serial port VCode1.Close</pre>	<pre>CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Free serial port m_VCode.Close();</pre>

CheckVacuumSensor

Description: Returns the state of the vacuum sensor.

Parameters: none

Returns: BOOL

Example:

Visual Basic	Visual C++
<pre>Dim vac_state as Boolean ` Initialize to use COM1 VCode1.Initialize 1 ` Save state of vacuum sensor to a ` variable vac_state = VCode1.CheckVacuumSensor</pre>	<pre>CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Save state of vacuum sensor to a // variable BOOL vac = m_VCode.CheckVacuumSensor();</pre>

CheckRotateAtPrinter

Description: Returns the state of the rotate-at-printer sensor.

Parameters: none

Returns: BOOL

Example:

Visual Basic	Visual C++
<pre>Dim RAP_state as Boolean ` Initialize to use COM1 VCode1.Initialize 1 ` Save state of rotate-at-printer sensor ` to a variable RAP_state = VCode1.CheckRotateAtPrinter</pre>	<pre>CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Save state of rotate-at-printer sensor // to a variable BOOL RAP = m_VCode.CheckRotateAtPrinter();</pre>

CheckRotateAtPlate

Description: Returns the state of the rotate-at-plate sensor.

Parameters: none

Returns: BOOL

Example:

Visual Basic	Visual C++
<pre>Dim RAP_state as Boolean ` Initialize to use COM1 VCode1.Initialize 1 ` Save state of rotate-at-plate sensor to ` a variable RAP_state = VCode1.CheckRotateAtPlate</pre>	<pre>CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Save state of rotate-at-plate sensor to // a variable BOOL RAP = m_VCode.CheckRotateAtPlate();</pre>

SlideForward

Description: Moves the vacuum head forward if `bForward` is TRUE and back if `bForward` is FALSE.

Parameters: BOOL `bForward`

Returns: none

Example:

Visual Basic	Visual C++
<pre> ` Initialize to use COM1 VCode1.Initialize 1 ` Move the vacuum head forward VCode1.SlideForward True </pre>	<pre> CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Move the vacuum head forward m_VCode.SlideForward(TRUE); </pre>

VacuumOn

Description: Turns on the vacuum if `bVacuumOn` is TRUE or off if `bVacuumOn` is FALSE.

Parameters: BOOL `bVacuumOn`

Returns: none

Example:

Visual Basic	Visual C++
<pre> ` Initialize to use COM1 VCode1.Initialize 1 ` Turn vacuum on VCode1.VacuumOn True </pre>	<pre> CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Turn vacuum on m_VCode.VacuumOn(TRUE); </pre>

SpinPlate:

Description: Rotates the plate to the apply position if `bSpinPlate` is TRUE and to the pickup / dropoff position if `bSpinPlate` is FALSE.

Parameters: BOOL `bSpinPlate`

Returns: none

Example:

Visual Basic	Visual C++
<pre> ` Initialize to use COM1 VCode1.Initialize 1 ` Spin the plate to the apply position VCode1.SpinPlate True </pre>	<pre> CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Spin the plate to the apply position m_VCode.SpinPlate(TRUE); </pre>

StageDrop

Description: Drops the plate stage if `bStageDrop` is TRUE and raises the plate stage if `bStageDrop` is FALSE. This method allows bar codes to be applied to plates of different skirt heights.

Parameters: BOOL bStageDrop

Returns: none

Example:

Visual Basic	Visual C++
<pre> ` Initialize to use COM1 VCode1.Initialize 1 ` Drop the plate stage VCode1.StageDrop True </pre>	<pre> CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Drop the plate stage m_VCode.StageDrop(TRUE); </pre>

RotateSlide

Description: Rotates the vacuum head toward the plate if bRotateSlide is TRUE and toward the printer if bRotateSlide is FALSE.

Parameters: BOOL bRotateSlide

Returns: none

Example:

Visual Basic	Visual C++
<pre> ` Initialize to use COM1 VCode1.Initialize 1 ` Move the vacuum head toward the plate VCode1.RotateSlide True </pre>	<pre> CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Move the vacuum head toward the plate m_VCode.RotateSlide(TRUE); </pre>

SpinPlateHalf

Description: When TRUE, rotates the plate half way to the printer in order to apply a label to the short side of a plate. When FALSE, the plate is rotated to the pickup position.

Parameters: BOOL bSpinPlateHalf

Returns: none

Example:

Visual Basic	Visual C++
<pre> ` Initialize to use COM1 VCode1.Initialize 1 ` Spin the plate so that a label can be ` applied to the short side VCode1.SpinPlateHalf True </pre>	<pre> CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Spin the plate so that a label can be // applied to the short side m_VCode.SpinPlateHalf(TRUE); </pre>

Print Label

Description: Prints a label on the Intermec printer. The label is NOT applied. Format is the number of the format to print the NumberOfFields is the number of fields in the particular format.

Parameters: short Format, short NumberOfFields, VARIANT Field0, VARIANT Field1, VARIANT Field2, VARIANT Field3, VARIANT Field4, VARIANT Field5

Returns: none

Notes:

- The method returns immediately.
- The “PrintLabelComplete” event is fired when the procedure completes.
- In the Visual Basic example, the underscore is only necessary if you type the function call on more than one line.

Example:

Visual Basic	Visual C++
<pre>Dim text1, text2 As String text1 = "Field0" text2 = "Field1" VCode1.Initialize 1 VCode1.PrintLabel 1, 3, text1, _ text2, "Field2", "", "", ""</pre>	<pre>CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Declare some BSTRs VARIANT Field0, Field1, Field2; VARIANT Field3, Field4, Field5; //Set up the variants to contain strings Field0.vt=VT_BSTR; Field1.vt=VT_BSTR; Field2.vt=VT_BSTR; Field3.vt=VT_BSTR; Field4.vt=VT_BSTR; Field5.vt=VT_BSTR; // Make up some values to print CString sField0, sField1, sField2; CString sField3, sField4, sField5; sField0 = "Field0"; sField1 = "Field1"; sField2 = "Field2"; sField3 = "Field3"; sField4 = "Field4"; sField5 = "Field5"; // Copy the strings to BSTRs Field0.bstrVal = sField0.AllocSysString(); Field1.bstrVal = sField1.AllocSysString(); Field2.bstrVal = sField2.AllocSysString(); Field3.bstrVal = sField3.AllocSysString(); Field4.bstrVal = sField4.AllocSysString(); Field5.bstrVal = sField5.AllocSysString(); // Print the format 1 label with 6 HR fields m_VCode.PrintLabel(1, 6, Field0, Field1, Field2, Field3, Field4, Field5); // Free up the VARIANTS VariantClear(&Field0); VariantClear(&Field1); VariantClear(&Field2); VariantClear(&Field3); VariantClear(&Field4); VariantClear(&Field5);</pre>

PrintAndApply:

Description: Prints a label on the Intermec printer and applies it to a plate. `Format` is the number of the format to print; `NumberOfFields` is the number of fields in that particular format; and `SidesToLabel` determines which sides of the plate will have a label applied.

Parameters: short `Format`, short `NumberOfFields`, short `SidesToLabel`, VARIANT `Field1`, VARIANT `Field2`, VARIANT `Field3`, VARIANT `Field4`, VARIANT `Field5`, VARIANT `Field6`

Returns: none

Notes:

- The method returns immediately.
- The “PrintAndApplyComplete” event is fired when the procedure completes.
- `SidesToLabel` is 1 to print on the long side, 2 to print on the short side, or 3 to print both sides.

Example:

Visual Basic	Visual C++
<pre>Dim text1, text2 As String Dim ShortSide, LongSide As Integer LongSide = 1 ShortSide = 2 text1 = "Field0" text2 = "Field1" VCode1.Initialize 1 VCode1.PrintAndApply 1, 3, _ ShortSide Or LongSide, text1, _ text2, "Field2", "", "", ""</pre>	<pre>#define LONG_SIDE 1 #define SHORT_SIDE 2 CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); // Declare some BSTRs VARIANT Field0, Field1, Field2; VARIANT Field3, Field4, Field5; //Set up the variants to contain strings Field0.vt=VT_BSTR; Field1.vt=VT_BSTR; Field2.vt=VT_BSTR; Field3.vt=VT_BSTR; Field4.vt=VT_BSTR; Field5.vt=VT_BSTR; // Make up some values to print CString sField0, sField1, sField2; CString sField3, sField4, sField5; sField0 = "Field0"; sField1 = "Field1"; sField2 = "Field2"; sField3 = "Field3"; sField4 = "Field4"; sField5 = "Field5"; // Copy the strings to BSTRs Field0.bstrVal = sField0.AllocSysString(); Field1.bstrVal = sField1.AllocSysString(); Field2.bstrVal = sField2.AllocSysString(); Field3.bstrVal = sField3.AllocSysString(); Field4.bstrVal = sField4.AllocSysString(); Field5.bstrVal = sField5.AllocSysString(); // Print the format 1 label with 6 HR fields m_VCode.PrintAndApply(1, 6, SHORT_SIDE LONG_SIDE, Field0, Field1, Field2, Field3, Field4, Field5); // Free up the VARIANTS VariantClear(&Field0); VariantClear(&Field1); VariantClear(&Field2); VariantClear(&Field3); VariantClear(&Field4); VariantClear(&Field5);</pre>

DisplayMessage

Description: Displays a message on the initialized VCode's 40-character VFD screen.

Parameters: VARIANT Message

Returns: none

Example:

Visual Basic	Visual C++
<pre>Dim text As String text = "Testing 1,2,3" VCode1.Initialize 1 VCode1.DisplayMessage text</pre>	<pre>CVCode m_VCode; // Initialize to use COM1 m_VCode.Initialize(1); CString sMyString; // Declare a string sMyString = "Hello, world!"; VARIANT vMessage; //Ensure vMessage can handle strings vMessage.vt=VT_BSTR; // Convert string to VARIANT vMessage.bstrVal=sMyString.Alloc- SysString(); // Show message m_VCode.DisplayMessage(vMessage); // Free up the memory used by the VARIANT VariantClear(&vMessage);</pre>

Events

Events are fired asynchronously by ActiveX to notify the container that a procedure has finished or an error has occurred. Consult Microsoft's ActiveX documentation on how to handle events in your Visual C++ or Visual Basic code.

- PrintLabelComplete() – The PrintLabel() procedure has completed.
- PrintAndApplyComplete() – The PrintAndApply() procedure has completed.
- Error(short Number, BSTR FAR* Description, SCODE Scode, LPCTSTR Source, LPCTSTR HelpFile, long HelpContext, BOOL FAR* CancelDisplay) – The stock Error event. See Microsoft documentation for explanation of function arguments.

Chapter 5: Troubleshooting

The following is a table of the error messages you may encounter while operating the VCode.

Table 2: Error Messages & Solutions

Error	Causes	Solutions
The serial port is not open	Operator has not called Initialize ().	Operator needs to call "Initialize()". See "Chapter 4: ActiveX" on page 17.
Intermec: Illegal string of characters returned	Serial cable was removed mid-transmission. The transmission was garbled to the printer.	Install serial cable. See "Install Serial Communications Cord" on page 10. Then reset VCode by cycling the power. Turn on the printer. Reset the VCode by cycling the power.
The Intermec printer did not respond	Serial cable is not installed. Intermec printer is not turned on.	Install serial cable. See "Install Serial Communications Cord" on page 10. Reset the VCode by cycling the power. Turn on the printer. Reset the VCode by cycling the power.
Parameter not within bounds	The parameter you set does not fall within the specified boundary.	For setting the Format value, the number must be between 1 and 99. For setting the number of HR fields, the number must be between 1 and 6. Check the value you have set and change it to fit these boundaries.

Table 2: Error Messages & Solutions

Error	Causes	Solutions
TIMEOUT: Failed to fetch a label	Label needs adjustment.	Adjust print position on the Intermec printer. See "Advanced Section" on page 12.
	Insufficient vacuum.	Check the vacuum and vacuum line. See "Install Vacuum Line" on page 8.
	Damaged vacuum pad.	Determine if one of the vacuum pads has been ripped or damaged. If so, call Velocity11's Service Center at (650) 846-6500.
	Low air pressure.	Check air line for leaks. Ensure that the air input pressure is set to 90 psi. See "Install Compressed Air Line" on page 9.
TIMEOUT:The label was not applied	No plate present.	Make sure that a plate is in the plate nest.
	Low air pressure.	Check air line for leaks. Ensure that the air input pressure is set to 90 psi. See "Install Compressed Air Line" on page 9.
	Vacuum pads are sticky.	If labels are not well adjusted, they may flip around and the vacuum pads will pick them up from the adhesive side. If this happens, clean the vacuum pads with warm water and a mild detergent.
TIMEOUT: Failed to rotate to the printer	There is a physical obstacle in the way of the vacuum pad head.	Remove obstacle. Reset the VCode by cycling the power.
	Insufficient air pressure.	Check air line for leaks. Ensure that the air input pressure is set to 90 psi. See "Install Compressed Air Line" on page 9. Reset the VCode by cycling the power.
TIMEOUT: Failed to rotate to the plate	There is a physical obstacle in the way of the vacuum pad head.	Remove obstacle. Reset the VCode by cycling the power.
	Insufficient air pressure.	Check air line for leaks. Ensure that the air input pressure is set to 90 psi. See "Install Compressed Air Line" on page 9. Reset VCode by cycling the power.

Regular Maintenance

The VCode needs little regular maintenance to keep it running smoothly. However, all repairs, such as replacing worn parts, will be covered under Velocity11's initial one-year warranty. See "Velocity11's Product Warranty" on page 31. After the first year, please refer to Velocity11's Service Plans to determine which level of service you need to cover the VCode. See "Velocity11 Service Plans" on page 3.

The Intermec printer needs regular maintenance to keep it clean and running well. For information on cleaning and maintaining your Intermec printer, please see Intermec's *3240 Bar Code Label Printer User's Manual*, chapter 3, © 1997 Intermec Technologies Corporation.

Appendix A

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Appendix B

Velocity11's Product Warranty

Velocity11, a California corporation with its principal place of business at 435 Acacia St., Palo Alto, California 94306 ("Velocity11") is the obligor of this service contract ("Contract").

This Contract sets forth the terms and conditions under which Velocity11 will provide Support Services (as defined below) for its Products covered under the Product Warranty guidelines.

1. DEFINITIONS

1.1 "Support Services" means the support and/or services that are available from Velocity11, as further described in Exhibit A, as may be amended from time to time.

2. COVERAGE

Velocity11 will provide the Support Services set forth in Exhibit A and pursuant to the terms and conditions of this Contract for one year after the purchase date of the product.

Additionally, the Customer has the option to purchase an enhanced "Platinum" Support Services contract. Terms, conditions and rates of enhanced coverage are set forth in Exhibit B of this Contract.

Within 30 days prior to the expiration date of the Product Warranty or Support Services contract, Velocity11 will offer the Customer the option of purchasing additional coverage based on the current Support Services rates at that time.

3. SUPPORT SERVICES

3.1 In order for Customer to receive the Support Services described in Exhibit A, Customer must:

- (a) Initiate a service request by contacting Velocity 11 at (650) 846-6500.

- (b) Provide the serial number of the Product, a description of the problem and the current version of the control software.
- (c) Provide a detailed description of the type of error, a description the specific error message and when it occurs, the activity or use of the Product when the error occurred and remedial measures taken by the Customer to correct the error.
- (d) Follow procedures and recommendations provided by the Velocity11 technician in an effort to correct problems via telephone. (VELOCITY11 WILL NOT DISPATCH A SERVICE TECHNICIAN TO PERFORM ON-SITE REPAIRS UNTIL THE TELEPHONE-BASED TROUBLESHOOTING PROCESS HAS BEEN EXHAUSTED)
- (e) Subject to Customer's applicable security requirements, provide Velocity11 with access to and use of all information and Product facilities, including working space, electricity and a local telephone line, necessary for Velocity11 to provide timely Support Services pursuant to this Contract.
- (f) To the best of its abilities, read, comprehend and follow operating instructions and procedures as specified in, but not limited to, Velocity11 documentation and other correspondence related to the products.

3.2 Velocity11 shall have no obligation to support:

- (a) altered or damaged Products;
- (b) any version of the Products other than the current version of the product;
- (c) any Product with out-of -date software or software that has been modified without Velocity11 approval and authorization;
- (d) Product problems caused by Customer's negligence; Customer abuse or misapplication, including but not limited to use of incorrect voltages, use of incorrect fuses, use of incompatible devices or accessories and improper or insufficient ventilation; use of Product other than as specified in the user manual; or other causes beyond the reasonable control of Velocity11, including but not limited to an act of God such as lightning, floods, tornado or earthquake;
- (e) Products installed on any hardware, operating Product version or network environment that is not supported by Velocity11;
- (f) Products sold or transferred by the Customer to another entity.

4. **FEE SCHEDULE**

Customer shall pay the annual fees for Support Services for the initial term of this Contract within thirty (30) days of the Effective Date. Thereafter, (unless Support Services are not renewed) Customer shall pay annual Support Services within 30 days of the commencement of the then-current term for such Support Services.

5. TERM AND TERMINATION

- 5.1 The initial term of this Contract is one (1) year from the Effective Date of this Contract unless earlier terminated in accordance with this Contract. The Customer will be notified within thirty (30) days prior to the expiration date of the Product Warranty or Support Services contract and will have the option of purchasing additional coverage based on the current Support Services rates at that time.
- 5.2 Velocity11 may suspend or terminate Support Services if Customer fails to timely pay Support Service fees as provided in this Contract. Velocity11 may also terminate Support Services if Customer breaches any provision of this Contract and such breach is not remedied within thirty (30) days after Customer receives written notice of the breach. Velocity11 shall also have the right not to renew this Contract with respect to any Product by providing written notice of such election at least ninety (90) days prior to the termination of Support Services for such Product, provided that Velocity11 no longer generally provides Support Services for such Licensed Product, or no longer provides the specific Support Services previously offered.
- 5.3 Customer may terminate this Contract if Velocity11 materially breaches its obligations under this Contract. If Customer terminates this Contract due to a material breach on the part of Velocity11, Velocity11 will refund the support fees for the then current term paid by Customer under the Contract, from the date of termination prorated to the end of the then current term.

6. REINSTATEMENT OR RENEWAL OF SUPPORT SERVICES

In the event Customer fails to timely renew Support Services under this Contract, Support Services shall be discontinued at the end of the then-current term. If Support Services are terminated for any reason, at Velocity11's sole option, Customer may be permitted to reinstate or renew Support Services by paying Velocity11 applicable Support Services fees.

7. LIMITED WARRANTY

Velocity11 warrants that Support Services will be performed with the same degree of skill and professionalism as is demonstrated by like professionals performing services of a similar nature.

8. LIMITATION OF LIABILITY

- 8.1 Direct Damages. VELOCITY11'S SOLE LIABILITY AND CUSTOMER'S EXCLUSIVE REMEDY FOR DAMAGES WITH RESPECT TO THE SUPPORT SERVICES UNDER ANY CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY, SHALL BE LIMITED TO THE AMOUNT PAID BY CUSTOMER FOR THE SUPPORT SERVICES.
- 8.2 Consequential Damages. UNDER NO CIRCUMSTANCES, INCLUDING NEGLIGENCE, SHALL VELOCITY11 BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF DATA, OR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, ARISING IN ANY WAY OUT OF THIS CONTRACT OR THE USE OF THE LICENSED PRODUCT, DESIGN TECHNIQUES AND DOCUMENTATION.

9. ENTIRE CONTRACT

This Contract and the attached Exhibit constitute the entire Contract between the parties regarding Support Services and supersede all previous Contracts or representations, oral or written, regarding the subject matter. This Contract may not be modified or amended except in a writing signed by a duly authorized representative of each party. Both parties acknowledge having read the terms and conditions set forth in this Contract and Exhibits attached hereto, understand all terms and conditions, and agree to be bound thereby.

EXHIBIT A**SUPPORT SERVICES****VELOCITY11'S STANDARD WARRANTY**

The Standard Warranty, effective for one full year upon purchase date, covers all parts and labor costs necessary to repair your covered product due to all functional part failures as reasonably considered under this contract. If the technician cannot correct the Product problem over the telephone at the initiation of a service request, then the technician will follow the procedures outlined for the Support Services, described in this Agreement.

Non-shippable Products: a service technician will be dispatched the next business day, excluding holidays, to repair the Product(s). Regular holidays shall include New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving, and Christmas Day, unless Velocity11 determines otherwise and notifies Customer with 30-day advance notice..

Shippable Products: Product(s) must be shipped directly to Velocity11 to be repaired.

On-Site Service. On-site service is available for Customer Products within the United States. The technician will need to have the full address of Customer Products' location. A service technician will be dispatched to Customer's location to service Customer's Product. The Services provided under this Agreement are repair services that are necessary because of any defect that exists or occurs in materials or workmanship in the Products or in any Product component covered by this Agreement. The Standard Warranty does **not** include preventive maintenance, installation, deinstallation, relocation services or operating supplies. If Customer or Customer's authorized representative are not at the location when the service technician arrives, Velocity11 will no longer be obligated to provide services under this Agreement for the Product that requires service on such visit. The service technician will leave a notice with the time of arrival as proof of arrival. Consequently, you may be charged an additional fee for a second service call to repair your instruments.

Service Area. This Agreement applies only to Products located in the United States. In addition, Velocity11 may invoice Customer an additional charge for service in certain remote areas of the United States. Velocity11 will notify Customer if Customer Products are in an area where Velocity11 cannot offer on-site service. If Customer relocates its Product(s) to a geographic location in which the Standard Warranty service is not available, Customer may incur an additional charge to maintain the same categories of service coverage at the new location. If Customer chooses not to pay such additional charge, Customer service may be automatically changed to categories of service that are available in such new location with no refund available.

For purposes of the Gold Service, all references to time will mean the Customer's local time. References to the United States include the continental United States, Alaska, Hawaii and Puerto Rico.

Whole Unit Replacement. If the telephone technician determines that the defective unit is one that is easily disconnected and reconnected, or if the technician determines that Customer Product is one that should be replaced as a whole unit, Velocity11 reserves the right to request that the defective unit be shipped to Velocity11 for repairs. Under the Standard Warranty, Velocity11 will repair the unit, and ship it back to Customer.

Parts Ownership. All service parts removed from Customer Product(s) become Velocity11 property. Customer must pay the current retail price(s) for any service parts removed from Customer Product(s) and retained by Customer.

EXHIBIT B

OPTIONAL SUPPORT SERVICES

PLATINUM SERVICE PLAN

The Platinum Service Plan is available to each customer at an additional cost.

Under the Platinum Service Plan the Customer is guaranteed a four-hour response time for all repair service calls. When required, a Service Technician will be dispatched the same day the request was initiated, 365 days of the year.

For shippable items, Velocity11 will ship out replacement product within twenty-four hours. The Customer will be responsible for shipping the damaged product back to Velocity11 in three working days after receiving the replacement product from Velocity11.

The Customer may upgrade to this plan during the first year of service. Please contact your Velocity11 representative for more details.